

The MINES of ARIZONA

This department is under the direction of Mr. W. E. Defty, the well known mining engineer, who will carefully scrutinize all matters relating to mining in order that only reliable information regarding legitimate enterprises shall find a place here.

The Republic would be pleased to receive information from any part of the state regarding the development of the mining industry. All communications should be addressed: Mining Department Arizona Republican.

Copper Output Very Large

It is safely estimated that the total output of refined copper during October will total close to 170,000,000 lbs. This is approximately 17,000,000 lbs. in excess of September production. This record production has been stimulated as a result of the heavy contracts placed for war munitions, but the entire production is not being taken up for during September it is estimated that there was a surplus of 30,000,000 lbs. in producers' stocks in this country.

Based on figures given out by the American Metal markets the total consumption is estimated at 125,000,000 lbs. As the exports were approximately 25,000,000 lbs., this would leave 100,000,000 lbs. for domestic consumption.

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"Production and imports of copper are large but consumption is increasing so largely that stocks of metal unsold and available are understood to be decreasing. The outlook for copper in the next two years seems particularly good."

"No man can measure the probable extent of demand; while with development of Alaskan and South American mines now practically finished we know the possible limit of supplies, except for extension of operations by two of our porphyry mines and arrangements to push development of a new and promising member of this group."

"It seems a good time for new mines of merit on the American continent to start, as European properties will be handicapped long after war is over. Even now, the Rio Tinto properties are severely handicapped by labor troubles, and it is related in New York copper circles that the war has resulted in damage by violence and from neglect to the great Austrian mines that will require many months after close of the war to repair to the extent of enabling them to resume regular production."

"After the war all Europe will want copper. Just now, the possible European purchasers are limited by the difficulty in taking deliveries and the careful scrutiny of credits are proposals covering payments."

The absurdity of newspaper reports of an impending fall in the price of copper while big buyers were contracting for deliveries seven months ahead, at better than 18 cents, has become apparent even to the prejudiced writers who have been misinforming the public of overproduction and accumulation.

Copper Suit Decided
Washington, Nov. 1.—Litigation involving \$200,000 over copper mines near Tucson, between Albert Steinfeld of New York and Louis Zeckendorf, the Supreme Court in favor of Zeckendorf. This litigation has continued for many years.

The Copper Outlook
A New York house wires over today:
"Producers of copper are satisfied with the present condition of the market and consumers are nervous over the outlook. Europe is sounding sellers as to chances for placing large orders. Makers of ammunition and brass factories are also in position where they must buy soon. A few large sales have been made in the last few days at 18 cents, but Europe is buying more."

Ray Hercules
The particulars regarding this property and its very strong board of directors and future possibilities has already appeared in detail in these columns and its flotation has been a great success. The allotments have already been mailed. The stock which was offered at \$3.75 a share, was heavily oversubscribed.

Miami
The Miami recently increased its dividend rate to \$1 per annum, but the company has been doing so well that another increase is already talked of in quarters where there is a bullish sentiment on the stock.

The statement for September showed lower costs than the management had ever predicted. The production was more than 4,000,000 pounds and the cost just broke the management's prediction of 8 cents, being 7.9 cents. Profits for the September quarter are expected to run well above dividend requirements.

PHILIPS-DODGE & CO.
Has Made Success in Mining Ventures but Stock Has Not Attracted Speculative Attention
Although the 450,000 shares of the Philips, Dodge, Co. Inc. (par \$100) are listed on the New York Stock Exchange, dealings in the stock are made for the most part privately between brokerage houses. The company has for years paid quarterly dividends of \$2.50 per share with extras from time to time. In 1912 the stock sold around 155. Early in 1914 it was quoted at 210. During the present year the bid price has

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Montezuma's well	15 miles
San Francisco peaks	13 miles
(Elevation 13,900 feet)	
Altitude of Flagstaff	6907 ft.
Prehistoric Ruins	35 miles
Natural Bridge	75 miles

Reported Gold Strike
There was a brief message came over the wires, but lacking particular

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details stating that a strike of gold had been made near Winkelman and that \$7000 was taken out of the pocket in two hours. We have, however, been unable to verify this before going to press.

Report on Quicksilver
The U. S. Geological Survey now has available for distribution its annual report on the production of quicksilver for 1914. The domestic production of quicksilver for the year was 16,518 flasks, valued at \$81,150. The price of quicksilver prices have been advanced to \$100 and \$105 per flask, owing to the great shortage created by heavy export demand. On this account it is also stated, the price is still likely to go higher.

People are now investigating the quicksilver deposits north of Phoenix, and the area in Gila county, is proving up to all expectations, by the driftwork along the vein. It is probable more extensive development work will be undertaken very shortly.

Magma
This property is continuing on its very successful career; the mill is running at full capacity and dividends no doubt will be paid each quarter. The assay office at the mine was entirely consumed by fire last Sunday morning.

Success Out of Failure
The Swansea camp is now operating very successfully under the Thomas lease with Ernest C. Lane, directing the developments and to whom the credit of uncovering the present ore bodies is due—their discovery necessitated 1200 feet of dead work, and the ore was found beyond the main fault.

Sixty car loads of ore was shipped in September and more could be extracted but the Humboldt smelter is limiting the shipments to 50 tons per day. Some of the ore is peculiar in composition, the gangue being mainly graphite with brecciations of boronite and chalcopirite, and very pretty in appearance. About 60 men are at present employed and the main No. 5 shaft is down to a depth of 500 feet. While the property was idle water put the workings in very bad shape but all these conditions have now been cleared up. The mine is being systematically developed and is being sufficient ore extracted to keep the workings in good and safe condition.

Congress
This old property with such an excellent past reputation is again under investigation by parties anticipating taking it over under bond and lease. The main shaft is down to a depth of over 3,000 feet with miles of drifts and cross cuts. The tailings dump tonnage is computed at one and a half to two million tons. It is to be hoped that the old mine will take on a new lease of life and all acquainted with the property see little reason why it shouldn't.

WOLVERINE & ARIZONA
The annual report of the Wolverine & Arizona Mining Co., for the year ended Sept. 30 shows receipts of \$216,526, expenditures of \$60,552, including an initial dividend disbursement of \$23,794. The cash on hand is \$14,974, an increase of \$14,663 over a year ago.

The following summary of property conditions is submitted: Work during the past year was largely confined to exploiting a sulphide ore body situated in the eastern end of the Warren claims high up in the mountains above the Higgins tunnel, which serves our workings as a main entrance.

The ore body seems to lay in an incline position following the general depth of the bedding planes of limestone. Most ore bodies in the district owe their origin to the effects of porphyry intrusions in the limestone and as we have this contact in the Warren claim.

Our work is carried on with reference to this intrusive porphyryite

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dyke, along which the ore is deposited with a distinct downward trend, which makes it necessary to put up raises from the main or tunnel level at frequent intervals, both to win the ore, and also to give better ventilation at all points.

It has been necessary to do a certain amount of drifting, crosscutting and raising, in order to extend the limits of the ore body and to provide a passage for tramming from the ore stopes. In pursuance of this work we have drifted and crosscutted a total of 136 1/2 feet during the year, we have also sunk a small winze 16 feet. In development work we extended various raises 739 feet.

We have extracted from our ore stone a total of 7,610 tons of copper sulphide ore, of an average tenor of 2.21 per cent copper, and also containing small values in gold and silver. This tonnage yielded the company's treasury a net revenue, after charges for shipping and smelter treatment of \$150,370, or \$17.12 per ton.

Our ore on reaching the outlet from the Higgins tunnel is hauled by teams to the El Paso & Southwestern railway station at Bisbee, and thence shipped by rail to the Copper Queen smelters, 26 miles to Douglas, Ariz.

Our smelting contract with the Copper Queen consolidated mines is still in force, and has resulted thus far, very advantageously to us in the final treatment of our ores as well as in excellent financial returns.

It is our intention during the present year to aggressively explore and develop the Warren claim, where at present our main workings are confined, and we hope, by thus doing to very materially enhance the value of our property, by opening up new ore bodies.

In December of last year we paid initial dividend of 20 cents per share on the capital stock of the company issued, and while we have established no regular policy regarding future dividend disbursements, we hope to be in a position to do so whenever conditions warrant.

Radium in Sea Water
Prof. Stewart J. Lloyd of the University of Alabama has recently published the results of an examination for radium of a sample of water obtained in the Gulf of Mexico, about 200 miles south of Mobile, and has given in this connection a resume of the results obtained by other investigators in measuring the radium content of sea water. The writer explains that the growing recognition

of radium as an important factor in geological processes has led to many analyses of rocks, soils, springs and river waters for that element, while our greatest reservoir of radium, the ocean, has received but little attention. Joly, who examined samples from several oceans and seas, obtained a value for the radium content so high that it cannot be reconciled with the values obtained by Eve and Satterly for the North Atlantic and Lloyd for the Gulf of Mexico. Examining Joly's results, the author finds an average which would make the total radium content of the ocean about 1400 tons.

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